REMARKS

This Amendment is filed in connection with a 1-month Extension of Time in response to the Office Action mailed March 22, 2006. All objections and rejections are respectfully traversed.

Claims 1-23 and 32-47 are pending in the case.

Claims 23-31 have been cancelled.

Claims 1, 13-14, and 22 have been amended to better claim the invention.

Claims 25-41 have been added.

Request for Interview

Should the Examiner not believe the case is in condition for allowance, the Applicant respectfully requests an Interview to advance the prosecution of this case. The Applicant believes an interview will be most productive after the Examiner has had an opportunity to review this Amendment, but prior to the issue of the next Office Action. As the Applicant can not determine when the Examiner will have time to consider this Amendment, given PTO workload, the Applicant respectfully requests the Examiner contact the Applicant at 617-951-2500 when he reviews this Amendment so that a mutually convenient time for interview may be arranged.

Claim Rejections - 35 U.S.C. §102

At paragraph 2 of the Office Action, claims 1-31 were rejected under 35 U.S.C. §102(b) as anticipated by Yin, U.S. Patent No. 5,926,458 (hereinafter Yin).

The Applicant's claim 1, representative in part of the other rejected claims, sets forth:

> 1. An intermediate network device for use in a computer network having a plurality of entities configured to issue requests to reserve network re-

sources for use by traffic flows, the reservation requests specifying one or more flow parameters, the intermediate network device comprising:

a traffic scheduler having one or more network resources for use in forwarding network traffic received at the device at different rates;

a classification engine configured to identify network messages belonging to respective traffic flows based upon predefined criteria;

a resource reservation engine in communicating relationship with the traffic scheduler and the classification engine, the resource reservation engine including ***a flow analyzer that is configured to apply one or more sets of predefined heuristics*** that are accessible by the flow analyzer ***to the one or more flow parameters specified in the reservation requests to determine a type of traffic of the given traffic flow, the one or more sets of heuristics to determine the type of traffic independent of any marking values in packets of the given traffic flow that identify traffic type***, and the flow analyzer further configured to ***select a queue and/or a queue servicing algorithm for assignment to the traffic flow*** corresponding to the reservation request.

Yin focuses on a method for servicing (i.e. dequeuing) IP data packets from queues within a router to meet differing quality of service (QOS) requirements. *See* col. 1, lines 61-66. To set the stage for the main description, Yin briefly describes that incoming data packets are allocated (enqueued) into appropriate queues based upon information in their packet headers. *See* col. 4, lines 33-37 and Fig 3, 60, 62, and 64. Yin then discloses, in the rest of the description, a procedure for servicing (dequeuing from) the queues at particular queue service times appropriate for the QOS requirements of the packets in the queues. *See* Fig. 3, 66, 68, 70 and Figs. 4-6. Each queue is serviced (dequeued from) in response to a queue service time value associated with the queue, which itself is calculated from a queue service interval based *I(i)* and a packet length *P(i)*. *See* col. 6, lines 32-40 and 62-67. The queue service interval is inversely related to the allocated bandwidth for the queue, such that higher bandwidth queues are serviced more frequently. *See* col. 6, lines 18-31.

The Applicant respectfully urges that Yin is silent concerning the Applicant's claimed "***a flow analyzer that is configured to apply one or more sets of predefined heuristics … to the one or more flow parameters specified in the reservation requests to determine a type of traffic of the given traffic flow, the one or more sets of heuristics to determine the type of traffic independent of any marking values in packets of the given traffic flow that identify traffic type***" to "***select a queue and/or a queue servicing algorithm for assignment to the traffic flow.***".

First, while the Applicant claims certain techniques to ***select a queue and/or a queue servicing algorithm for assignment to the traffic flow***, the majority of Yin bares little relation to selecting an appropriate queue, but instead deals with algorithms for dequeuing data packets from queues. Indeed col. 5, line 15 to col. 6, lines 67 of Yin, which is repeatedly cited to by the Examiner, deals exclusively with algorithms for dequeuing packets. Such description in Yin presuppose that data packets are already in appropriate queues, and thus provide little illumination towards selecting ***a queue and/or a queue servicing algorithm*** in the first place.

Further, the brief portion of Yin that does discuss selecting appropriate simply states that a buffer controller "allocates the received data packets to the appropriate queue 46-52 based on information contained in the header of the data packet." *See* col. 4, lines 33-37. Thus, Yin appears to look to some type of tag or marking in a packet header to choose a queue for a packet. Such description in no way suggests the Applicant's claims. The Applicant claims a flow analyzer that uses ***one or more sets of predefined heuristics*** with ***flow parameters specified in the reservation requests to determine a type of traffic of the given traffic flow…independent of any marking values in packets of the given traffic flow that identify traffic type.*** The claimed technique address shortcomings of the prior art, such as Yin, by allowing an intermediate network device to independently determine an appropriate queue for a traffic flow, not relying on marking values placed in the packets which may or may not be reliable. The Applicant respectfully directs the

Examiner's attention to page 6, lines 16-24 of the Specification for further background which may assist the Examiner.

Accordingly, the Applicant respectfully urges that Yin is legally insufficient to anticipate the present claims under 35 U.S.C. §102 because of the absence of the Applicant's claimed novel "***a flow analyzer that is configured to apply one or more sets of predefined heuristics … to the one or more flow parameters specified in the reservation requests to determine a type of traffic of the given traffic flow, the one or more sets of heuristics to determine the type of traffic independent of any marking values in packets of the given traffic flow that identify traffic type***" to "***select a queue and/or a queue servicing algorithm for assignment to the traffic flow.***"

Discussion of Selected Dependent Claims

While the Applicant believes that all the dependent claims should be allowable as they depended from independent claims that should be allowable, to advance the prosecution of the case, the Applicant would like to specifically discuss a few selected dependent claims.

First, the Applicant's claims 7 and 8 set forth:

> 7. The intermediate network device of claim 6 wherein the flow parameters include one or more of ***a token bucket rate (r) value, a token bucket size (b) value and a peak data rate (p) value***.

> 8. The intermediate network device of claim 7 wherein a first set of predefined heuristics is given by the following equation:

$$(r \le r') \; \textbf{AND} \; (b \le b') \; \textbf{AND} \; \frac{p}{r} \le p\_to\_r'$$

where,

r' is a programmable token bucket rate constant, b' is a programmable token bucket size constant, and p_to_r' is a ratio of peak data rate to token bucket rate constant.

For both claims, the Office Action points to Yin col. 5, line 15 to col. 6, lines 67. The Applicant respectfully urges that Yin makes no mention of ***a token bucket rate value, a token bucket size value,*** or ***a peak data rate value*** at these columns or elsewhere. Since Yin does not even mention these values, it is unclear how Yin may possibly show the specific equation "$(r \leq r')$ AND $(b \leq b')$ AND $\frac{p}{r} \leq p\_to\_r'$" claimed in claim 8. Accordingly, the Applicant suggests that claims 7 and 8 are allowable.

Second, The Applicant's claim 10 sets forth:

> 10. The intermediate network device of claim 4 wherein
>
> a reserved queue is selected for each traffic flow that does not satisfy the first set of heuristics, and
>
> ***a Weight Fair Queuing (WFQ) queue servicing algorithm*** is applied to the reserved queues.

For claim 10, the Office Action again points to Yin col. 5, line 15 to col. 6, lines 67. The Applicant respectfully urges that Yin makes no mention of the ***Weight Fair Queuing (WFQ) queue servicing algorithm*** at these columns or elsewhere. Instead, Yin discusses other algorithms to select packet queues to service. Accordingly, the Applicant suggests that claim 10 is allowable.

Third, the Applicant's claim 11 sets forth:

> 11. The intermediate network device of claim 2 wherein the flow analyzer, in response to the application of the one or more sets of heuristics, ***associates a selected Per-Hop Behavior (PHB) with the traffic flow*** corresponding to the reservation request.

For claim 11, the Office Action again points to Yin col. 5, line 15 to col. 6, lines 67. The Applicant respectfully urges that Yin makes no mention of the ***associates a selected Per-Hop Behavior (PHB) with the traffic flow*** at these columns or elsewhere. Accordingly, the Applicant suggests that claim 11 is allowable.

Claim Rejections - 35 U.S.C. §103

At paragraph 3 of the Office Action, claims 9 and 15 were rejected under 35 U.S.C. §103(a) as obvious in view of Yin, U.S. Patent No. 5,926,458 (hereinafter Yin).

The Applicant's claim 9, representative of the claims 9 and 15, sets forth.

> 9. The intermediate network device of claim 8 wherein *r'* is approximately 12288 bytes/second, *b'* is approximately 592 bytes/second and *p_to_r'* is approximately 110 percent.

Yin does makes no mention a programmable token bucket rate constant ***r'*** or a programmable token bucket size constant ***b'*** or a ratio of peak data rate to token bucket rate constant ***p_to_r'***. Indeed, Yin does not even mention use tokens. Accordingly, it is unclear how Yin may possibly make obvious the specific claimed values assigned to these constant. Accordingly, the Applicant suggests that claim 9 and 15 are allowable.

In the event that the Examiner deems personal contact desirable in disposition of this case, the Examiner is encouraged to call the undersigned attorney at (617) 951-2500.

In summary, all the independent claims are believed to be in condition for allowance and therefore all dependent claims that depend there from are believed to be in condition for allowance. The Applicant respectfully solicits favorable action.

Please charge any additional fee occasioned by this paper to our Deposit Account No. 03-1237.

Respectfully submitted,

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